

## WE CLAIM:

1. A thermal head printer for printing but not perforating a substantially light-insensitive thermographic material, said thermal printer said thermographic material and comprising:
  - a transport system having a transport direction,
  - n thermal heads, where n is an integer,each of said thermal heads comprising an array of substantially rectangular energizable heating elements, said heating elements having a length  $L_n$  in said transport direction and a pitch  $P_n$  between adjacent heating elements, and
  - a means for supplying electrical energy to each of said substantially rectangular energizable heating elements in at least one of said thermal heads,
  - said transport system being capable of transporting said light-insensitive thermographic material in contact or proximity with at least one of said thermal heads,wherein at least one of said thermal heads comprises heating elements for which  $L_n/P_n$  is between 0.25 and 0.88.
2. Thermal head printer according to claim 1, wherein said thermal head printer comprises a replaceable thermal head or set of thermal heads.
3. Thermal head printer according to claim 1, wherein said thermal head printer comprises at least two thermal heads, configured such that a first thermal head can be replaced by an nth thermal head while being capable of maintaining a comparable image tone with said substantially light-insensitive thermographic material.
4. Thermal head printer according to claim 1, wherein said substantially rectangular heating element is a split resistor.
5. A process for printing a substantially light-insensitive thermographic material with a thermal head printer for printing but not perforating a substantially light-insensitive thermographic material, said thermal printer said thermographic material and comprising:
  - a transport system having a transport direction,
  - n thermal heads, where n is an integer,

each of said thermal heads comprising an array of substantially rectangular energizable heating elements, said heating elements having a length  $L_n$  in said transport direction and a pitch  $P_n$  between adjacent heating elements, and

- 5     - a means for supplying electrical energy to each of said substantially rectangular energizable heating elements in at least one of said thermal heads,  
      - said transport system being capable of transporting said light-insensitive thermographic material in contact or proximity  
10    with at least one of said thermal heads,  
      wherein at least one of said thermal heads comprises heating elements for which  $L_n/P_n$  is between 0.25 and 0.88, comprising the steps of: choosing a thermal head, providing said substantially light-insensitive thermographic material,  
15    transporting said substantially light-insensitive thermographic material past said thermal head, and image-wise heating of said substantially light-insensitive thermographic material by supplying electrical energy to said heating elements.
- 20 6.    Process according to claim 5, wherein said thermal head printer comprises a replaceable thermal head or set of thermal heads.
7.    Process according to claim 5, wherein said thermal head printer comprises at least two thermal heads, configured such that a  
25    first thermal head can be replaced by an nth thermal head while being capable of maintaining a comparable image tone with said substantially light-insensitive thermographic material.
8.    Process according to claim 5, wherein said substantially  
30    rectangular heating element is a split resistor.
9.    A second process for printing a substantially light-insensitive thermographic material at different printing speeds with a thermal head comprising heating elements without significant  
35    variation in image tone, wherein the length of said heating elements in the transport direction of said substantially light-insensitive thermographic material decreases with decreasing printing speed.
- 40 10.    A third process for printing a substantially light-insensitive thermographic material at different printing speeds with a different thermal head at each printing speed without

significant variation in image tone, wherein each of said different thermal heads comprises heating elements with a different length in the transport direction of said substantially light-insensitive thermographic material and said  
s length of said heating elements in the transport direction of said substantially light-insensitive thermographic material decreases with decreasing printing speed.